

## What's New in MR Safety: Active Implants, Device Labeling and Identification Wm. Faulkner, B.S.,R.T.(R)(MR)(CT), FSMRT

Over the last several years some pacemakers have received conditional labeling. It is obviously important that a particular device can be identified as being one that is indeed MR Conditional.

Several methods exist and/or have been proposed to facilitate positive system ID (PSID). The use of a radiopaque marker (ROM) is utilized in some devices. However, if an existing device, or lead, through testing obtains MR Conditional labeling, it is often not practical or even possible to modify existing devices. Additionally, radiography may not be available in all clinical settings and would obviously expose the patient to ionizing radiation. Another issue relating to the use of ROM is that it only identifies the device but not the specific conditions of use. The use of RFID chips could be very beneficial from that standpoint.

It is important that all MR physicians and technologists use proper terminology when referring to the safety of patients with implants and/or devices. Any metallic device (whether active or passive) cannot be labeled as MR Safe. The use of the term "MR Compatible" is also not valid. Implants or devices can only be labeled one of two ways: "MR Unsafe" or "MR Conditional".

There seems to be some confusion as to what "MR Conditional" actually means. Many believe it means an implant or device *might* be safe, or that there are risks since it is not labeled as "MR Safe". MR Conditional labeling means that the object has been demonstrated to pose no known hazards in a specified MR environment under specified conditions of use. These conditions may include: Static Field, RF power (SAR), type of coil, slew rate, spatial field gradient, etc. Because these conditions vary with the implant/device, blanket policies to scan certain "types" of devices are very dangerous and should not be implemented. Because these are labeled as "MR Conditional" one must positively identify the device and know the conditions of use to adequately ensure the safety of the patient during the MRI exam.